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THE ROLE OF WATER IN MONTANA'S ECONOMY

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Prepared for the
**Water Management and Sustainable Development
Study Group**

and the

State Water Plan Advisory Council

by the

**Water Resources Division
Department of Natural Resources and Conservation**

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Introduction

During a series of public meetings in May, 1991, several participants suggested that the state water plan should address two separate but related issues: (1) the role of water in Montana's economy; and (2) the relationship between sustainable development and water management. Based on these suggestions, the State Water Plan Advisory Council asked the Department of Natural Resources and Conservation to "study" these two issues.

To accomplish this task, the Department convened a small study group and sponsored a series of three meetings during the last year.¹ At the first meeting in September, 1991, Bob Heffner, the Administrator for Economic Development in the Department of Commerce, reviewed economic trends in the state. He also explained an initiative, sponsored by Governor Stan Stephens and administered through the Department of Commerce, to develop a strategic economic development plan for the State of Montana.

During the second meeting, in November, 1991, the study group discussed the concept of sustainable development and its application to water resources policy and management in Montana. To help focus its effort, the study group invited Dr. Rick Wilson, Director of Sustainable Development for the British Columbia Roundtable on the Environment and the Economy, to its third meeting in April, 1992. Dr. Wilson discussed the purpose, function, and accomplishments of the British Columbia Roundtable, and offered several observations on the potential link of sustainable development and water management in Montana.

The purpose of this paper is to address the first question -- the role of water in Montana's economy. A separate paper, titled Sustaining Montana's Water Resources, addresses the relationship between sustainable development and water management. The ideas presented in this paper are not necessarily being endorsed by the members of the study group or the Department of Natural Resources and Conservation.

General Economic Trends

According to information collected by the Governor's Council on Montana's Future, the structure of Montana's economy is changing. Table 1 illustrates our movement from a predominantly goods-producing to a service-oriented economy.² This movement is forecast to continue into the future as income mobility (especially retirement income), manufacturing efficiency, and information technology play increasingly larger roles in the demographics of the state. Over the last 45 years the structural shifts experienced by Montana's industrial sectors have been enormous and are most likely not cyclical, but are instead irreversible.³

Table 1: Montana Employment Trends ⁴					
Economic Sector	Percentage of Total Employment				
	1950	1960	1970	1980	1990
1. Services	10.1%	12.1%	17.6%	21.4%	26.5%
2. Wholesale and Retail Trade	19.3	21.1	20.2	22.4	22.1
3. Government	14.9	20.0	20.9	19.2	18.7
4. Agriculture	25.9	17.9	12.2	8.1	7.3
5. Finance, Insurance, and Real Estate	2.2	3.6	6.2	6.4	6.4
6. Manufacturing	2.8	3.8	8.5	6.7	5.8
7. Transportation and Public Utilities	11.5	9.9	6.3	6.7	5.6
8. Construction	5.5	5.8	5.0	5.7	4.6
9. Mining	7.5	5.8	2.4	2.5	1.7
10. Other Services*	N.A.	N.A.	0.8	0.9	1.3

*Includes forestry, fisheries, and agricultural services as well as jobs held by U.S. residents employed by international organizations and foreign embassies and consulates in the U.S.

Interestingly, several sectors within the aggregates presented above have seen phenomenal growth. The employment share of the nonagricultural proprietor sector has increased from 14.3% in 1970 to 18.6% in 1990, adding over 37,000 jobs in the process.⁵ According to Chuck Brooke, former Director of the Montana Department of Commerce, the employment shares of dominant basic industries in the state show the service sector leading the way in growth and total employment.⁶ Health service jobs, high-paying and education intensive, increased from 4% of total employment in 1970 to almost 7% in 1990, an increase of almost 18,000 jobs which currently average over \$26,000 per year in personal income.⁷ Clearly, many of the new jobs in the expanding service area are relatively high-paying; research and development jobs are up 28% per year, medical and scientific instrument production is up 16% annually, and machinery and furniture manufacturing is up over 10% per year.⁸

Table 2: Selected Personal Income Categories for Montana, 1970-1990 (in millions of current dollars)⁹

Income Category	1970	1975	1980	1985	1991
1. Earnings from Work	\$1,932	\$3,195	\$4,875	\$5,971	\$7,605
2. Transfer Payments	270	573	1,034	1,635	2,565
3. Dividends, Interest, Rent	345	587	1,243	2,108	2,525

We have also seen a burgeoning new set of basic industries in this state, basic in that the organizations involved bring money into Montana from outside its borders (see Table 2 for following discussion). Income in the form of transfer payments (social security, veterans benefits, unemployment benefits, etc.) have grown from \$270 million in 1970 to \$2,565 million in 1991 (a 850% increase), while income earned as wages and salaries through employment has only increased by 300% over the same period. Transfers are a large and rising source of income for Montana. Indeed, the same trend is seen in the area of dividends, interest, and rent (a traditional retirement income category) which is now a \$2,525 million income category in Montana that has grown by 632% from 1970 to 1991.¹⁰ Transfers, dividends, interest, and rent which were only 32% of earnings from work in 1970, are fully 67% of employment earnings in 1991.

The travel, tourism, and recreation industry in Montana is also growing in importance. Current estimates of the impact of nonresident travel in the state rate this segment of the travel industry as one of our major (and growing at over 10% per year) basic industries,¹¹ providing over \$159 million in personal income directly through wages and salaries.¹² Economists see both nonresident travel and the robust retiree market as new basic industries which will provide real job and income growth well into the next century.¹³

It is clear, however, that several sectors are moving in the opposite direction overall. The agricultural sector has lost fully two-thirds of its employment share over the 1950 to 1990 period -- 5,000 less jobs in 1990 than in 1970. Actual personal income earned in 1990 by resident federal employees in Montana exceeds the personal income earned on Montana's 25,000 farms by over 30%.¹⁴ The mining industry has lost over three-fourths of its employment share -- over 100 less jobs in 1990 than in 1970.

Implied in this discussion is the central point about why we care about Montana's economy -- providing our citizens the opportunity for gainful employment. Any discussion of competing

economic sectors should focus on measures which shed light on the long-term economic viability of enterprises, that is, a situation where jobs are created and retained over time.

These facts appear at odds with what many people believe and what most people have heard about Montana's economy. We have been taught that our economy continues to depend most heavily on resource extractive industries such as timber, mining, and agriculture. How many times have we heard that, "Agriculture is Montana's #1 industry?" However, this statement is not born out by the facts. Industry spokesmen usually stake this claim based upon gross receipts (i.e. sales revenues); not employment, personal income, or any other valid measure of an industry's economic performance. Rather, agricultural advocates focus on gross receipts from sales.

Gross receipts from sales only indicate what is taken in by a firm irrespective of its costs of doing business. This approach is premised on the argument that the purchase of inputs (fuel, labor, machinery, etc.) by a producing industry stimulates other "secondary industries" through multiplier impacts of the original spending. However, operating costs should not be considered "secondary" in importance to receipts. When operating costs approach the level of receipts, bankruptcy becomes a possibility. This effectively eliminates all employment, all "secondary" benefits, as well as the business. Because the people of Montana are concerned about job growth, not growth in gross receipts, a different measure of long-term economic viability is more relevant.¹⁵

Another widely used and intensively studied economic indicator is "Gross State Product." It measures the market value of goods and services produced by labor and property located in a state.¹⁶ The calculation amounts to gross receipts less the cost of intermediate goods and services purchased as inputs. It is a net measure of value-added which indicates the resources available to compensate the owners and employees of firms operating in the state for their efforts. It is an accurate, appropriate, and nationally accepted measure for ranking industrial sectors' long-term ability to meet the stated economic goals of Montanans as we move into the 21st century: providing job and income growth for their children. Table 3 shows an industrial ranking very similar to the situation found in both employment and personal income. Service industries are leading the way. Montana's traditional resource extractive industries, while still making significant contributions, have fallen well down the list in terms of gross state product.

Table 3. Montana's Largest Industries by Gross State Product in Millions of 1989 Dollars ¹⁷	
1. Finance, Insurance & Real Estate	\$2,160
2. Services	\$2,100
3. Transportation & Public Utilities	\$1,473
4. Retail Trade	\$1,162
5. State and Local Government	\$1,129
6. Manufacturing	\$1,010
7. Construction	\$ 897
8. Mining	\$ 870
9. Farms	\$ 869
10. Federal Government	\$ 686
11. Wholesale Trade	\$ 677

Certain trends are apparent from the foregoing discussion. The number of high-paying jobs available in what have been Montana's traditional industries (mining, timber, oil & gas, and agriculture) will at best remain steady or continue to decline. This decline can be traced to the substitution of capital for labor as natural resource firms streamline operations and improve productivity to compete globally. These historical growth sources for Montana's economy "will employ fewer people, contribute smaller shares of state and local taxes, and intensify the erosion of Montana's already limited tax base."¹⁸

This is not to say that these industries will not continue to be important to Montana. Their ability to exploit market niches, expand value-added operations, and seek export markets will enhance their viability; however, there are other fast-growing industries in the state which are already of equal or greater size than these traditional extractive industries, and offer greater opportunities for the economic future of our children.

The Nature of Water Use in Montana

Given these structural shifts in our economy, we should reconsider the way we view our water resource as potentially contributing to Montana's economic growth. Many industries depend

on water in sufficient quantity and quality to remain in business. Will water scarcity become (or is it already) a limiting factor in the diversification and development of economic opportunity in the state? This question has yet to be answered.

Agricultural production, hydropower generation, recreational pursuits, municipal/domestic water supply, and industrial water for cooling and other processes comprise a representative sample of the spectrum of water uses in Montana. Water is also a key, but difficult to quantify, ingredient in the "quality of life" that contributes to growth in real estate and retirement income. These various uses may compete with one another as they affect the quantity, timing, and quality of water.

First we consider the quantity impacts. It is clear that agricultural use accounts for over 96% of all water consumed in the state exclusive of evaporation. Evaporation from reservoirs actually exceeds total agricultural water consumption, but benefits all of the user groups mentioned above to a greater or lesser extent.¹⁹ The other users consume very small amounts of water.

Hydropower and recreational uses of water depend upon certain quantities of water being left instream, but do not "consume" any of the water present at the site of their use. On the other hand, and from the perspective of other users, legally protected hydropower and other instream flow uses make large amounts of water just as unavailable as if it were consumed. Likewise, water diverted from the stream and consumed is not available for hydropower generation, fisheries needs, or recreational pursuits.

The timing of streamflows can be changed significantly both by impoundment of water and return flows from diversions. In some cases these changes are beneficial in prolonging flows in dry seasons of the year, reducing damaging flood flows, and generally extending the amount of water available throughout the year. However, this can have negative impacts to species dependent on natural cycles for streambed scouring, temperature variations, and sediment deposition.

Finally, some uses change the natural quality of streamflows. Indeed, the diffuse non-point sources of pollution due to irrigation return flow and runoff, resource extraction, natural runoff, forest practices, and impoundments account for over 90% of the state's impaired surface waters. Municipal and industrial discharges account for the remainder of water quality impacts.²⁰

The Economic Value of Water

A case-by-case analysis is needed to consider any cooperative interactions to facilitate economic development (i.e. water

leasing, marketing, banking, etc.); however, evaluating the relative magnitudes of various uses' economic values and their impacts on one another can inform more exacting inquiries in the future.

Table 4 summarizes a series of studies on the economic value of water in Montana. The point of this discussion is not the exact values from each study, since such comparisons are not valid given the various methodologies employed. The point is that the various direct users of water in Montana reap unit benefits that are fairly comparable. Perhaps the only distinction that could be drawn is that municipal use generally is a higher valued use, especially in its role for drinking water supplies.²¹

Table 4: Economic Value of Water in Montana	
Water Use Category	Range of Economic Benefit Estimates (\$/AF)
1. Hydropower ²²	\$30 to \$70
2. Recreation ²³	\$2 to \$68
3. Irrigation ²⁴	\$0 to \$100
4. Municipal ²⁵	\$0 to \$800
5. Industrial ²⁶	\$5 to \$370

Given the overlap in economic values between uses, one might expect active bargaining to be taking place among users seeking to enhance business profits where water is a limiting factor of production. This expectation does not appear to be born out in practice. Part of the reason may be that water scarcity is not perceived as a problem of sufficient urgency to justify this activity. Perhaps there is a lack of appreciation for the need to legally protect recreational and aesthetic values in water. Such values are usually thought of as "public values," and not within a private person's ability to protect or prerogative to purchase.. It may simply be assumed that the government would not allow Montana's public values in its water resource to be degraded.

It could also be that Montana water law and management discourage market processes for several reasons: 1.) Diversionary

water right requirements; 2.) Imperfect knowledge of relevant water quantities; 3.) Lack of water right enforcement; 4.) Transaction costs; and others.

Implications

1. The economy of Montana has changed over the last few decades, and is no longer dominated by natural resource extractive industries. It must be said, however, that these formerly dominant extractive industries will continue to play an important role in Montana's economy, though an increasingly smaller one.

2. Other sources of economic activity (services, retirement income, real estate, value-added manufacturing, tourism, etc.) provide the best hope for the future economic prosperity of Montana. Growth in these economic sectors is partially dependent on the high quality of Montana's environment, and are negatively impacted by stream dewatering, aquifer contamination and depletion, surface water pollution, loss of open space, degradation of fish and wildlife habitat, etc.²⁷

3. Most Montanans are unaware of this new economic reality. It is incumbent upon agencies such as DNRC, DHES, and DFWP to protect our natural amenities and encourage those economic sectors which promise to provide job opportunities for future generations of Montanans, while preserving our culture and collective sense of place.

ENDNOTES

1. The members of the study group varied somewhat from meeting to meeting, and included Senator Lorents Grosfield; Representative Tom Lee; Stan Bradshaw (Trout Unlimited); Richard Hauer (Flathead Lake Biological Station); and Matthew McKinney, Mark Albee, Curt Martin, Rich Moy, and Gary Fritz, all with the Department of Natural Resources and Conservation.
2. Montana DNRC, Draft Environmental Impact Statement for Water Reservation Applications Above Fort Peck Dam, p. 127, June 1991 and U.S. Department of Commerce, Bureau of Economic Analysis, Table SA25, "Full and Part-Time Employment by Industry," September 1992.
3. See Appendix, "Preview of Montana's Economic Situation," Governor's Council for Montana's Future, May 1992.
4. Supra, U.S. Department of Commerce, Table SA25, .
5. Supra, U.S. Department of Commerce, Table SA25.
6. Chuck Brooke, Speech at Montana State University, May 1, 1992.
7. Supra, U.S. Department of Commerce, Table SA25, and same source, Table SA5, "Total Personal Income by Major Source and Earnings by Industry," September 1992.
8. Supra, Chuck Brooke.
9. Supra, U.S. Dept. Commerce, Table SA5.
10. Supra, U.S. Department of Commerce, Table SA5.
11. Montana Department of Commerce, Census and Information Center, January 1992 in "Developing a Statewide Strategic Economic Development Plan- Volume 1: Situation Analysis and Goals for the State of Montana," September 1992. Produced under contract for the Governor's Council for Montana's Future by the National Association of State Development Agencies.
12. University of Montana, Institute for Tourism and Recreation Research, Estimates of Economic Impact of Non-Resident Travelers to Montana, April 1990.
13. North-West Policy Center, "A North-West Policy Reader: Options for Rural Communities," 1991, p.59.
14. Supra, Governor's Council for Montana's Future, May 1992.

15. Governor's Council for Montana's Future, News Release on Survey Results, October 9, 1992.

16. Edward Trott, et al., "Gross State Product by Industry, 1977-1989," in Survey of Current Business, U.S. Department of Commerce, Bureau of Economic Analysis, December 1991.

17. Supra, Trott, et al., December 1991.

18. Supra, Governor's Council for Montana's Future, 1992.

19. Montana DNRC, Montana Water Use in 1980, March 1986.

20. Montana Department of Health and Environmental Sciences, Montana Water Quality 1990: The Montana 305(b) Report, June 1990.

21. Montana DNRC, Missouri River Basin Final Environmental Impact Statement for Water Reservation Applications above Fort Peck Dam, Jan. 1992.

22. Supra, Montana DNRC, Jan. 1992 and Montana Office of the Governor, Clark Fork Basin Project: Status Report and Action Plan, Dec. 1988.

23. Montana Dept. of Fish, Wildlife, and Parks, The Net Economic Value of Fishing in Montana, August 1987 and Montana DNRC, Instream Flows in the Missouri River Basin: A Recreation Survey and Economic Study, July 1990.

24. Supra, Montana DNRC, March 1986. Also Supra, Montana DNRC, January 1992 and Diana Gibbons, Resources for the Future, The Economic Value of Water, p.39, 1986.

25. Supra, Montana DNRC, January 1992 and Gibbons, 1986.

26. Supra, Gibbons 1986.

27. John B. Braden and Charles Kolstad, Measuring the Demand for Environmental Quality, 1991, and many other studies.

THE MONTANA FUTURES PROJECT

REPORT ONE:
SITUATION ANALYSIS and PUBLIC RESPONSE

October, 1992

The Montana Futures Project is charged with preparing a vision and agenda for the state's economic future, including goals for the stewardship and development of Montana's human, natural and industrial resources, and statistical benchmarks for measuring progress toward those goals.

The Project will work to establish "an orderly, continuous process which will allow Montanans to consider the facts, express their preferences, and permit priorities to be established and changed in light of current economic realities and citizen preferences."¹

I. OVERVIEW OF THE MONTANA FUTURES PROJECT

The Governor's Council for Montana's Future, a non-partisan panel of over 20 citizens from all parts of the state and all walks of life, was assigned the above task by Governor Stan Stephens in February 1992.

The Council set out to chart the economic future in a new way, and to correct the problems typical of previous planning efforts, in which:

- plans were usually created by experts, and presented to the citizens only after they were done;
- good strategies were created, but not always implemented--we planned what to do, but didn't always do what we planned;
- we were never able to say how well or badly our strategies, programs and policies worked, because the expected results--and agreed ways to measure the results--were not built in at the start.

•Public Participation--Report One. As the first and most fundamental step, the Council began by asking individual Montana citizens to declare what they want. Montanans were asked to consider the economic facts, then identify the key elements of their preferred vision of Montana's future, together with the actions to take, problems to solve and opportunities to seize in order to achieve that future.

To get these answers, we met with over 870 citizens at 29 town meetings all across the state in May and June. Next, we conducted a statewide random telephone survey--speaking directly to yet 400 more Montanans--to delve into the issues that emerged as most important in the town meetings.

This first Report summarizes the economic situation analysis presented at the town meetings, and presents the public response--choices for Montana's future gleaned from the town meetings and telephone survey.

•Vision, Goals and Benchmarks--Report Two. The Futures Project's second Report will state a vision for Montana's future, and goals for reaching that vision,

¹ Montana Economic Study, Bureau of Business and Economic Research (University of Montana, Missoula: 1970).

composed from the town meetings and surveys. Report Two will also introduce the element of accountability, by defining statistical benchmarks to measure the results Montana is looking for, and to mark progress along the way.

Do we want to increase incomes? How much, how broadly, and by when? Do we want to "diversify, strengthen and stabilize" our economy? What indicators will tell us that the economy is more diverse, strong and stable--or less? What exactly do we mean by those words--and how do we know if we're moving closer to the goal, or falling further away?

By setting benchmarks in advance, we can hold our institutions accountable--and prevent gamesmanship by factions who choose the numbers that bolster their own positions.

Finally, Report Two will make recommendations for continued citizen leadership of economic development planning. By providing authority and resources for citizen-led oversight, reporting, review and redirection of economic development activity, the Governor and Legislature can assure that accountability is enacted.

•Action Plan--Report Three. The Montana Department of Commerce and its consultants for the project, the National Association of State Development Agencies, will present an action plan in Report Three, including suggested strategies, actions and programs for reaching the public's goals and vision. Report Three will be presented as a menu from which an incoming administration and legislature can select options for moving in the directions defined in the public input and participation stage of the Futures Project.

•Top-down versus bottom-up. Because we began with citizen input, and end with citizen oversight, some have referred to this Project as "bottom-up" planning. We prefer to think of it as "top-down"--with the top being the citizens of Montana. The Montana Futures Project is a success, if the means are put in place for Montana's future to become Montana's choice.

II. ECONOMIC ANALYSIS: SHORT-TERM TRENDS AND LONG-TERM STRUCTURAL CHANGE

A. SHORT-TERM TRENDS

1. The early 90s, versus the decade of the 80s: mixed signals.

Since the turn of the decade, Montana has received a continuing stream of positive economic news, culminating in late 1992 with the state's unaccustomed but widespread recognition as one of the brightest spots in the national economy.

Montana has held a national leadership position in per-capita income growth since 1989, when the state registered a 9.4% increase over the previous year, compared to a U.S. average of 6.6%. But our comparative performance in 1991-1992 surpassed even that record: Montana's annual per-capita income growth rate of 7%, sampled in August 1992, was number one in the nation.²

A variety of other good news reinforces the per-capita income statistics.

• Montana's Department of Labor and Industry reports that total non-agricultural employment has increased every year for six years running, from 275,400 in 1986 to over 312,400 in August, 1992.

• US West Corporation, in a June 1991 report, identified Montana as "truly one of the West's biggest comeback stories of the late 1980s," based on 1989 to

2 All figures from US Dept of Commerce, Bureau of Economic Analysis.

1990 net employment growth among small businesses of 9.8%, buoyed by a remarkable 31.9% growth rate among small exporting companies.

- Using a five-part performance index, U.S. News & World Report ranked the Montana economy sixth in the nation, in a September 14, 1992 article.

- On September 21, Kemper Securities' Tax-Exempt Fixed Income Research Report ranked of Montana as the nation's number one state economy, on an index composed of changes in employment, home sales, mortgage delinquencies and foreclosures, and unemployment rates.

- Even the composition of production seems to be changing in the direction long advocated by economic policymakers, as exporters of value-added products increased their share of total Montana export sales, from 16% in 1987 up to 29% in 1992.

So there is much good news. But, given the booms and busts in our history, we Montanans have learned to take economic upturns with a grain of salt. As historian K. Ross Toole puts it: "Montana's growth...conforms to the patterns of the land itself. For every pinnacle there is an equally impressive declivity. For every sudden rise, a sudden fall." Perhaps we need not fear an immediate fall. But it is well to remember the experience of only a few years past.

There is indeed another side to our recent economic history. Despite Montana's current leadership in per-capita income growth, over the whole decade of the 1980s Montana's real per-capita income grew only one-third as fast as income for the U.S. as a whole.

One consequence of relatively slow growth in incomes for the decade was an increase in poverty: the percentage of Montanans living in poverty rose from 12.3% in 1979 to 16.1% in 1989--an increase from 94,300 persons to 124,900 persons living in poverty. And Montana's slow growth in population had the widely-publicized political consequence of causing the state to lose one of its Congressional representatives.

Good news and bad news. Which picture is the true picture? In fact, they both are true. These seemingly contradictory facts illustrate a business cycle, with a heavy downturn in the first half of the decade followed by moderate recovery beginning in 1987.

It is important for us to absorb the lessons of the immediate past, and apply them to the immediate future. It is still more important for us to look beyond these short-term cycles, and recognize the long-term structural changes that are transforming our economy.

After reviewing some highlights of an economic forecast to the mid-90s, we will return to the theme of long-term structural change and its significance for our state.

2. The mid-90s: a short-term forecast.

Using an econometric forecasting model created by the Bureau of Business and Economic Research at the University of Montana, NASDA forecast the state's economic performance, for industrial sectors and substate regions, through 1994, taking 1990 as a base year.

Highlights of the forecast by industrial sector are:

- Mining (-6.2%), wood and paper manufacturing (-11.9%), railroads (-10.2%), and agricultural services(-6.8%) are all expected to decline from 1990 to 1994 in real labor income.
- The service-producing sector will continue to grow from 1990 to 1994 in both real labor income (9.7%) and employment (7.8%).
- Farming is expected to experience strong growth from 1990 to 1994 in real labor income (24.0%).
- Tourism expenditures should continue to increase moderately between

1990 and 1994.

- The federal government "industry" can be expected to play a diminished role in Montana's future, as employment in that sector continues to decline.
- Statewide real labor income (5.7%) and employment (3.8%) will both increase from 1990 to 1994 as a result of growth in farming and the service-producing industries.
- Statewide total real personal income--which includes such categories as dividends, interest, rents, and transfer payments--is forecast to decrease 3.0% from 1990 to 1994, largely due to lower interest rates and falling rents nationwide.

B. LONG-TERM STRUCTURAL CHANGE

Beneath Montana's characteristic boom-and-bust cycle--illustrated by the rapid growth of the 70s, the recession of the early 80s, the "fragile recovery" of the early 90s and the predicted downturn of the middle 90's--there lie concealed some surprisingly consistent and surprisingly large long-term transformations. Deeply-embedded changes of this kind, which persist through cyclical ups and downs, are referred to as "structural." Structural changes are particularly important for planning. They give us a sense of predictable directions underlying the volatility of recent and current events.

1. Shifts in Employment Share.

Since the end of World War II the Montana economy, like the U.S. as a whole, has moved from goods producing toward service producing. This movement has occurred for many reasons, including global competition, changing technology and changing consumer preferences.

The extent and persistence of these structural changes in Montana's major industries is illustrated in the following figures, drawn from the Montana Department of Labor and Industry's Bureau of Research and Analysis. Going back to 1947 and forward to employment projections for 1997, these figures cover 50 years of employment history in our state, and they show graphically what we mean by a long-term structural change.

- **Mining employment.** Over 50 years, mining's share of employment has fallen by more than half, from 7% of all Montana employment to 2%. Between 1947 and 1991, actual numbers of mining jobs fell from 9,600 to about 6,000.

- **Manufacturing.** The percentage share of Montana's employment provided by this major industry group, which includes logging and lumber, has fallen over the 50-year period, from 18.4% of all non-ag jobs, to 7%. Notably, the steady decline in employment share (percentage of total jobs) does not in this case mean a decline in absolute numbers of jobs. From 1947 to 1991, manufacturing jobs increased slightly, from 18,400 to 21,700. Manufacturing and timber employment are not disappearing; but they are becoming a smaller part of the total picture.

- **Transportation, communications and public utilities.** We see the same trend, a 50-year drop from 16% of total non-agricultural employment to 7% of the total. Absolute numbers of jobs in this industry have remained almost steady, at 22,200 in 1947 versus 20,300 in 1991.

- **Government's share of employment** also has declined sharply in Montana, from 27% in 1974 to 22% today.

• Agriculture. We also see clear evidence of a downward long-term direction in share of total employment held by Montana's largest traditional basic industry. From 1970 to 1990, agriculture's share of total employment fell from 12% to 7%. Total Montana employment rose from 299,800 in 1970 to 438,000 by 1991, while agricultural employment fell from 36,500 to 30,700.

It is important to realize that, negative as they may be, these figures represent a success story--the success of these mature industries in meeting the competition by becoming more efficient, year after year. Efficiency means less units of input per unit of output; the bad effect is that labor and total wages in these industries are therefore in relative decline.

But the news is by no means all bad. Recall that total employment has risen sharply over the full period, increasing by almost 37,000 jobs just between 1986 and 1992. Under those conditions, when some industries are losing percentage share, some other industries must be gaining both percentage share and absolute numbers in jobs and wages. And indeed, that has been the case.

• Finance, insurance and real estate employment went up steeply, for example, doubling from 2.6% of total employment to almost 5%, in 50 years. That's a growing share of a growing pie--it means an increase from 3,600 jobs to a projected 14,500 jobs in 1997.

• Wholesale and retail trade increased from 25% to 27% of all employment. This industry is so large in absolute numbers that a mere 2% gain translates into a jump from 34,100 up to 85,000 jobs, over the 50 year period.

• General services recorded the largest gains of any major industry group. This category, which includes all the professional occupations, grew steadily for the whole fifty years, almost without pause, from 13% to 26% of all nonagricultural jobs. That represents growth from 17,400 to a projected 81,000 jobs in 1997--an average annual gain of 7.3% sustained for 50 years.

The structural change, then, is clear: a large, long and consistent movement in share of employment from goods-producing to service-producing industries. To a large extent, this also represents a movement from the "basic" sector, which exports its production to other states and countries, to the "derivative" or domestic sector, which primarily serves local residents.

~~The figures therefore demonstrate, quite dramatically, the ability of the so-called "derivative" industries--the ones that serve our domestic market in Montana--to keep growing, over an extended period of years, and even to grow rapidly, when the "basic" industries are not growing or are growing very slowly.~~

2. Results of Structural Change: Montana's Largest Industries.

As a result of these structural changes, Montana's economy has become different from what we are accustomed to thinking it is. It is not just an economy that is going to change--it is an economy that has already changed.

Most Montanans who attended the strategic planning town meetings shared the opinion that our largest industries are agriculture, tourism, lumber and logging (which are included in manufacturing) and mining, in about that same order.

The following figures summarize the current facts of the matter--the most relevant and accurate figures we have by which to rank industry size: employment and personal income.

~~MONTANA'S LARGEST PRIVATE INDUSTRIES BY NUMBERS OF PERSONS EMPLOYED~~ are, in order: #1, services (26.7%); #2, retail trade (18.7%); #3, farming/ranching (7.0%); #4, finance/insurance/real estate (6.4%) and #5, manufacturing (including logging and lumber--5.6%). If all levels of government are included, they would come in 3rd place, providing 18.4% of total employment.

~~MONTANA'S LARGEST INDUSTRIES BY PERSONAL INCOME AND EARNINGS:~~ once again,

#1 is services (24.4%) and #2 is retail trade (12.6%), followed by #3, transport/communications/utilities (9.0%); #4, manufacturing (8.2%); and #5 farming/ranching (6.0%). If public employment is included, all levels of government would come in second place, providing 21.1% of total earned income.

3. Montana Mirrors the National Economy.

When we compare Montana to the U.S., we see that the changes are remarkably similar. Mining's share of employment was cut almost in half, between 1960 and 1990, in both Montana and the U.S. Montana manufacturing fell from 12% to 7.5%, while U.S. manufacturing was falling from 31% to 19%. And in both Montana and the U.S., the service sector grew, to represent 63% of nonfarm Montana jobs and 59% of nonfarm jobs in the U.S.

This tells us that we are not alone, but that we are responding to changes in the global economy, just as the United States as a whole is responding. The changes we see in Montana are not the result of special circumstances, policies or business climate issues in Montana alone. The same changes are happening across the nation.

STRUCTURAL CHANGE IN U.S. AND MONTANA INDUSTRY EMPLOYMENT

Employment Trends as a Percent of Total Nonfarm Employment

<u>Year/Industry Sector</u>	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>
MT Mining	4.4%	3.3%	3.1%	2.1%
U.S. Mining	1.3%	0.9%	1.1%	0.7%
MT Manufacturing	12.2%	11.9%	8.6%	7.5%
U.S. Manufacturing	31.0%	27.3%	22.4%	19.0%
MT Service-Producing	53.7%	53.3%	58.0%	63.0%
U.S. Service-Producing	46.9%	49.0%	53.7%	59.0%
MT Government	23.1%	26.1%	25.0%	23.9%
U.S. Total Government	15.4%	17.7%	18.0%	16.5%

Source: Annual Planning Information for 1991-1992, Montana Department of Labor & Industry, and the 1991 Statistical Abstract of the United States, U.S. Department of Commerce.

4. Changes in the Composition of Personal Income--a New Industry?

Momentous as it has been, the shift in Montana's industrial sector employment profile has not been the only major structural change of the last several decades. The composition of personal income--the proportion of Montana income derived from "earned" sources such as labor and proprietors' income, versus the proportion coming from "unearned" sources such as dividends, interest, rents and transfer payments--has also changed dramatically.

In 1960, unearned income constituted 23.1% of all Montana personal income. The corresponding U.S. figure was 20.4%. By 1990, 39.7% of all income in Montana was derived from dividends, interest, rents and transfer payments (such as social security and medicare)--a 72% growth in this category, over the 30-year period. The U.S. figure had also increased, though not quite so dramatically, to 32.5%.

This revolutionary shift--a near doubling of the share of one income component--must be understood and accommodated in our forecasting and planning for the future.

The nearly 40%, or \$4.6 billion of 1990 Montana income drawn from dividends, rents, interest and transfers was over seven times farm/ranch earnings that year (both proprietors and labor taken together); it was 2.7 times larger than earnings from mining, timber and other manufacturing, construction and farming/ranching combined.

Even the entire service-producing sector, yielding \$4.3 billion in 1990,

could not quite match that year's unearned personal income stream.³

This structural income change can be understood as tracking the growth of a new "industry" that, like tourism, is outside the bounds of the standard industrial classification categories, and beyond the horizons of conventional economic development planning: the retirement industry.

With its \$4.6 billion, rapidly-growing income stream--compared to \$760 million in 1990 nonresident travel expenditures--the retirement industry can be thought of as the iceberg of which tourism is the visible tip. Growth in both tourism and retirement are driven by the ageing of the U.S. population, and both are attracted to similar, high-amenity locations.

What can be said of the future of unearned income and retirement, conceived as an industry?

As the "baby-boomer" demographic bulge moves upward in age, we can expect the proportion of unearned income to continue to increase rapidly--although bear markets in rental values, corporate dividends and interest rates, and restrictions in growth of federal entitlements are forecast to dampen the growth over the next few years.

The implications for Montana's future, given the size and growth of income in this category, may be massive indeed. The potential exists for a forward-looking industry (the producers of retirement housing, elder recreation, medical and other goods and services targeted to this market) to create a self-financing promotional effort on the scale and model of the Travel Montana tourism program.

5. Some Causes and Implications of Structural Change.

This economic analysis has presented a selection of some of the most crucial and dramatic facts about the performance and evolution of Montana's economy in the last half of this century, as a context for debate and decisions by the citizens of this state about their common future in the first half of the next century.

We will propose here only a few general ideas about the causes and consequences of structural change--interpretations which the Council and its consultants believe are firmly based on the data and the history reviewed in the course of our work.

First, as to causes: we believe that a key prerequisite for planning to deal with these changes is to recognize that they are long-term and directional, rather than short-term and cyclical in nature. The traditional response of Montanans, harking back to the first part of the 20th century, has been to view downturns as cyclical. This school of thought says, "Just hold on. Things will come back again."

But many of the so-called "downturns" in Montana's economy are the result of permanent worldwide changes in the structure of supply and demand for many of the products of the western United States:

- the Green Revolution, with not just Europe, but countries such as China and India now exporting food;
- the changing structure of supply in mineral products, with new technologies such as fiber optics replacing commodities such as copper;
- the changing structure of demand, as downsizing of automobiles and other machinery calls for fewer units of raw materials traditionally produced in the West.

Second, as to consequences: much of the data presented above illustrates the historical shift away from Montana's traditional resource-based, commodity-producing industries and toward a service and knowledge-based, specialty-production economy. The income composition numbers highlight a powerful companion shift toward earnings derived from a new and unconventional "basic" industry: retirement.

We want to emphasize, in the strongest possible terms, that this information does not indicate that our traditional industrial base will shrink in numbers of jobs and dollars, or cease to play a main and essential role in Montana's future. The information at hand indicates only that the traditional industrial base is providing a smaller proportional share of incomes and employment in an expanding overall economy.

The natural resource industries will remain large, important and viable industries in Montana, and any realistic plan for the future must include a

³ All figures from US Dept of Commerce, Bureau of Economic Analysis.

leading role for our traditional "big three": agriculture, mining and lumber. But at the same time, the historical record and the global dynamics we have reviewed make it clear that these industries will not be the source of the next round of long-term growth in employment and incomes.

The big three can be viewed as a foundation, as a stepping stone to investment, diversification and growth in progressively more specialized, value-added and knowledge-intensive markets. We must emphasize here that the traditional industrial base is a stepping stone, not an escalator. It is clear that we will not be carried effortlessly into a future of growing jobs and income if we just stand still on this base.

In the future, the natural resource sectors that historically have been growth sources for Montana's economy will also contribute a smaller share of state and local taxes, thus intensifying the erosion of Montana's already limited tax base. The result of such shifts in the tax base, if we do not adjust our tax structure to draw on the more rapidly-growing sectors, may make it extremely difficult for state and local governments to sustain the level of services which have been provided in the past.

As structural transitions continue to affect the national and state economies, their impacts will ultimately move the U.S. economy beyond mass production toward increasing customization, beyond mass marketing and distribution towards niches and micro-marketing, beyond the monolithic corporation to new forms of organization, beyond managed trade between nation-states to operations that are both local and global, and away from manual labor, toward mental labor.

Montana's economy, in general, will be under pressure to respond in similar ways to the effects of these global structural transitions.

III. THE PUBLIC RESPONDS TO MONTANA'S ECONOMIC SITUATION: TOWN MEETINGS AND TELEPHONE SURVEY

A. TOWN MEETINGS

As the first major activity of the Montana Futures Project, town meetings were held in 29 locations all across the state in the Spring of 1992. Over 870 Montanans attended.

A summary of the above economic analysis was presented, to provide a common background for discussion. Then, the citizens who attended were asked to break in to small "brainstorming" groups, to list the main elements of their optimistic vision for Montana's future, together with the main actions to take, opportunities to seize, and problems to overcome in order to realize our desired future over the next twenty years.

The Council believed strongly that the public should be approached first, with these broad, open-ended questions in order to define the general issues. After the main issues were defined by the citizens, we proceeded to much more detailed questions in a random sample telephone survey (covered in the next section of this report).

The town meetings revealed a surprising level of consensus on long-term goals, with strong common themes throughout the state, from large towns and small towns, and from East and West. Overall, the top five goals and visions for the state were: a clean environment, quality education, a business-friendly climate, jobs to keep Montana youth in the state, and a balance between industry and the environment.

As for what must happen to achieve the goals, general tax reform was most important, followed by attracting business, planning and zoning, workers' compensation reform, and tax reform specifically focused on a sales tax.

Montanans believe the state's strengths lie in our natural resources and new opportunities to use them, our quality of life, the quality of our education system, and in the personal character (including work ethic) of our citizens.

Together with the general consensus on goals, some regional diversity was evident. Western Montana residents, for example, ranked a clean environment as their top goal, while it ranked 13th among eastern Montanans attending the meetings. Eastern Montanans ranked business-friendly climate as the first goal, while Western Montanans listed it sixth.

In all areas of the state and all sizes of towns, however, both "balance between industry and environment" and "jobs to keep our youth in the state" ranked among the top five goals.

The table below summarizes the top five responses to all the town meeting

questions--statewide totals, as well as from small and large towns, and from East and West.

[INSERT TOWN MEETING SUMMARY TABLE]

B. RANDOM SAMPLE TELEPHONE SURVEY ON ECONOMIC FUTURE

To explore in greater detail the issues and concerns identified as most important in the town meetings, 407 Montana citizens in 97 communities from Absaroka to Wolf Point were interviewed, using a 20-minute telephone survey. Questions targeted opinions about opportunities, strengths, weaknesses and problems related to Montana's economy and the natural and social environment.

Many questions asked Montanans to rate responses on a scale of 1 ("poor" or "unimportant") to 5 ("excellent" or "very important"). Sometimes respondents were also asked whether matters they had rated "very important" were or were not "immediately urgent," requiring action within two years or less. Throughout the survey, issues were generally ranked 3.5 or higher, confirming the importance that the town meetings assigned to the same issues.

BALANCED GROWTH

~~Predominant in the responses was a demand for simultaneous improvements in what are sometimes seen as opposites--economic growth and job opportunity, on the one hand, quality of life and environmental preservation on the other.~~

Preserving Montana's quality of life is a major concern. Overall, respondents rate their current quality of life as very high--3.95 on a scale of 1 to 5. Montanans are torn between whether they believe the state is currently moving in the wrong (45.2%) or the right (35.9%) direction, with almost 19% undecided. However, 58% interviewed believe that Montana's quality of life will decline over the next twenty years if things continue as they are currently--emphasizing a perceived need for a strong stance on quality of life issues.

At the same time, over 95% of respondents believe that it is important for Montana's economy to become stronger during the next 20 years. Additionally, when asked to rate the importance of various goals for economic policy, respondents specified the following priorities:

	Rating
1. Growth in jobs and income	4.38
2. Economic stabilization and diversification	4.18
3. Preserving the environment and a traditional way of life	4.10
4. Balance between job growth and environmental preservation	4.03

Note that all the above goals were ranked "important," and ranked very close together, reinforcing the conclusion from the town meetings that Montanans want both job/income growth and a quality social and natural environment--not one as opposed to the other.

Given the above priorities, Montanans were asked to identify what are the areas in which the state has the greatest problems. The responses in rank order were:

1. Unemployment
2. Tax structure
3. Worker's compensation
4. Social Services (health care, welfare, education)

GROWTH IN JOBS AND INCOME

Viewed together with other responses, it is clear that placing unemployment as number one is part of a broader concern about growth in jobs and income levels.

• Income and employment growth were the number one positive goals (above); but an emphasis on job creation and retention was also evident in the social services policy area, where reform of the current welfare system to move people into the job market was given the highest priority, and also rated "immediately urgent" by 64% of those responding.

• During the 1980s, Montana's employment grew by 9%, about half the growth rate for the U.S. as a whole. Asked whether they prefer Montana's rate of employment growth in the next 20 years to be half as fast, just as fast, or faster than the U.S. rate, more than 86% of those responding believe that Montana employment should grow at least as fast as the U.S. rate.

• Likewise, Montana's average per-capita income in 1990 was only 80% of the U.S. average. Over 88% of those surveyed believe that during the next 20 years Montana's income should at least become equal to the national average.

As a qualifier to the support for growth, it is important to realize that Montanans appreciate their low population density and the high quality of life associated with it. 63% of respondents believe that Montana's current population (808,000) is about right; 9.6% think it is already too large; 24% believe there are too few people.

TAX STRUCTURE

"Tax structure" was considered the second greatest problem facing Montana. Tax reform takes precedence over all other goals for government, for both importance (4.35) and urgency (47%), followed by reducing bureaucracy and regulation (4.31 / 43%); reducing government spending (4.23 / 46%); reducing political partisanship (4.11 / 31%); and improving land-use planning and zoning (3.99 / 28.5%).

Clearly, "tax reform" means "tax reduction" first. However, many Montanans say they would be willing to accept a tax increase for certain specific purposes: majorities were willing to accept a tax increase specifically for education (69.4%); health care and social services (53.8%); and creation/expansion of Montana businesses (52.8%); while minorities would favor an increase for natural resource management (44.1%), infrastructure investment (40.3%) and attraction of businesses from outside the state (34.2%) trailing.

Those willing to bear the burden of additional taxation were asked to describe the type of taxes they would prefer. The sales tax received the most votes among the 7 kinds of taxes listed (averaging about 33%), with the excise tax as a distant second at about 15%.

63.8% of those responding to the survey support state tax incentives to encourage out-of-state businesses to relocate in Montana. An even greater number (84.0%) were in favor of tax incentives to promote startups and expansions of businesses within the state.

WORKER'S COMPENSATION and BUSINESS CLIMATE

In terms of priorities for business climate improvements, reducing worker's compensation costs is rated first, followed (in order) by investment in infrastructure (4.04); and improved access to financial capital (3.84). reducing/simplifying regulation (3.54), reducing business taxes (3.42) and more state programs to promote business/industry (3.36). Reining in worker's comp was also overwhelmingly rated the most urgent action in this category, at 36.6%, compared to 24% who identified infrastructure as most urgent.

Asked to rank business assistance priorities, respondents placed "promoting and developing new and expanding business within Montana" first, followed (in order) by tourism, value-added products and recruiting out-of-state companies.

Stabilization/diversification. In addition to lowering worker's compensation costs and assisting in-state businesses, Montana respondents recognize the importance of diversifying their economy to meet the challenges of a globalized market. When asked to rate various industries in order of perceived importance to Montana's economic future, respondents ranked them as follows:

Tourism	4.48
Farming and mining	4.41
Retail and wholesale operations	4.09
Lumber and wood products	4.02
Services	3.96
Export operations	3.95
Telecommunications & transportation	3.93

SOCIAL SERVICES

The fourth problem area in order of priority listing by the citizens was social services--including education, health care and housing.

With respect to education, respondents ranked producing a well-educated labor force highest, followed by improving the general quality of the education system, increasing innovative educational programs at all levels, and improving equity in educational opportunity. In the health care and other social services area, reform of the welfare system to improve service and move people into the job market ranked first, followed by making health care more affordable and accessible, reducing the cost of welfare programs, and establishing universal health coverage.

The importance attached to health and education issues is reinforced, as noted above, by the willingness of majorities of Montanans to accept tax increases aimed specifically at improved performance in these areas. However,

despite the high priority attached to housing and other physical infrastructure as a business climate improvement goal, only 40.3% of those surveyed were willing to bear a tax increase for local infrastructure investment--a sentiment borne out by the recent negative vote on the Big Sky Dividend ballot referendum.

ENVIRONMENT AND THE ECONOMY

~~Though environmental preservation and sustainability did not emerge as a key problem area, these issues were at the very top of the list in terms of Montanan's visions and goals for the future--a close second only to issues surrounding improvement in job and income growth, and clearly sought together with economic growth.~~

In rating environmental goals on a scale of 1 to 5, respondents gave equal importance to striking a balance between industry and environmental preservation (4.20), and reducing the influence of out-of-state forces on natural resource policy (4.19), but attached higher urgency to the latter. Increasing the utilization of Montana's natural resources (3.88) ranked third as a priority, followed by promoting environmental protection as our major priority (3.28). Given the choice to continue, reduce or improve the current high level of compliance (90%) with water-quality standards, a majority of 63% responding believe that performance must improve.

What perhaps deserves most emphasis, in summary of the survey responses, is the almost universal demand for better economic performance (22% rating a stronger economy "somewhat important" and 74% rating it "very important"). This demand is closely linked with expectations of environmental balance and improvement, and accompanied by expressed willingness to support improved education and social services.

Those surveyed would like local governments and the private sector to take the lead in the state's overall development, with state government and public/private partnerships playing a somewhat lesser role and federal government the least important role.

IV. TOWARDS THE FUTURE: THE NEXT STEPS

In the closing months of 1992, the Governor's Council for Montana's Future will move rapidly to conclude the first year's work on the Montana Futures Project, publishing two additional reports.

Report Two will specify vision, goals and benchmarks for our economic future--where we want to go, and how we'll know that we're getting there. In addition, this report will make recommendations for permanent citizen oversight of planning, and for building benchmark and other performance measures directly into the state's budgeting process.

Finally, Report Three will address what we must do over the coming years and decades to realize our chosen economic future. This final report will be presented as a menu of strategies, programs and actions for selection and enactment by the new Administration and Legislature.

It is explicitly recognized that not all the suggestions in Report Three will be acceptable to both the legislative and the executive branches; we expect that some will be acted upon and others not.

Enactment of a comprehensive legislative program is not this project's objective, nor its criterion for success.

Instead, if the public's goals can be firmly established; if ongoing public participation in goal-setting is instituted, along with public oversight, reporting and redirection of development activity; if benchmarking for accountability is adopted; and if a combination of actions are started toward the goals--then we will be able to say that the "orderly continuous process" we were charged to create has been set in motion.

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